

## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH ADMINISTRATION  
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

I N S E C T P E S T S U R V E Y

Special Supplement (1945, No. 4)

Issued July 20, 1945

PARASITIZATION OF THE SUMMER GENERATION OF THE EUROPEAN CORN BORER  
IN FIVE EASTERN LOCALITIES IN 1944

By C. A. Clark and D. W. Jones, 1/ Entomologists  
Division of Cereal and Forage Insect Investigations

INTRODUCTION

During late July and early August 1944, surveys to obtain information on the parasitization of the first or summer generation of the European corn borer were made in 5 eastern localities: Middlesex County, Mass.; Taunton, Mass.; East Hartford, Conn.; Atlantic, N. J.; and Burlington, N. J. In Middlesex County, Mass., 2 subsamples of approximately 50 borers each were collected in each of 12 sections of a 12-square mile area. In the other 4 study localities 25 collections of 50 specimens each were obtained where possible. The number of borer larvae collected from the different areas and the percentages found parasitized by the respective parasites, all of which are exotic species, are shown in table 1.

Table 1.--Parasitization of European corn borer larvae in five eastern localities in the summer of 1944.

Locality	Number of:						Total	
	borer	Percent parasitization by—						
	larvae	Lydella	Inareolata	Macrocentrus	Chelonus			
Middlesex County, Mass.	1,401	0.7	23.7	0.6	0	25.0		
Taunton, Mass.	1,254	3.0	0.6	35.7	3.3	42.6		
East Hartford, Conn.	1,177	2.8	24.8	3.3	0.1	31.0		
Atlantic, N. J.	925	2.4	4.5	30.5	0.1	37.5		
Burlington, N. J.	1,249	14.7	0.2	0.4	0	15.4		

1/ Acknowledgment is made of the assistance of our associates, K. D. Arbuthnot, who provided the information on parasitization of the borer in the Middlesex County, Mass., locality, and S. W. Carter and A. V. Cosenza, who assisted with collections and rearings of material from the other four localities investigated.

MIDDLESEX COUNTY, MASS.

As noted in table 1, 25.0 percent of the borer larvae from this area were parasitized by exotic larval parasites, and Inareolata punctoria was the most common parasite. Lydella grisescens was present but scarce. The recent establishment and continued maintenance of Macrocentrus gifuensis was confirmed by its recovery in several collections. Of 1,063 corn borer pupae observed, 3.2 percent were parasitized by the introduced parasite Phaeogenes nigridens.

TAUNTON, MASS.

The most important parasite in this locality was the polyembryonic braconid Macrocentrus gifuensis which had attacked 35.7 percent of the borers collected. Lydella grisescens, Inareolata punctoria, and Chelonus annulipes are also well established in this locality. C. annulipes parasitized 3.3 percent of the hosts observed.

EAST HARTFORD, CONN.

The total of 31.0 percent of the borer larvae that were found parasitized is the lowest average parasitization for the summer generation of the borer in this locality for the last 5 years. As in previous years, the most important parasite present was the ichneumonid Inareolata punctoria. Lydella grisescens is also established in this locality but is not abundant. Macrocentrus gifuensis was established in this locality in 1940 and is increasing rapidly both in effectiveness and distribution. It had parasitized 8.1 percent of the borers collected within 3 miles of the release point.

ATLANTIC, MONMOUTH COUNTY, N. J.

The 37.5 percent parasitization of the corn borer in this locality in the summer of 1944 was much higher than at any previous time, and this increase was due entirely to the great abundance of the introduced parasite Macrocentrus gifuensis. In the central 20 square miles of the territory surveyed, and surrounding the location where the parasite was first established, this exotic parasite had attacked 39.9 percent of the borers collected. Inareolata punctoria is also established in this locality. As shown in the table, parasitization by the tachinid Lydella grisescens was very low.

BURLINGTON, BURLINGTON COUNTY, N. J.

The only parasite present in large numbers was the fly Lydella grisescens, but Inareolata punctoria and Macrocentrus gifuensis are also present in this locality.

